

HIGH TEMPERATURE MECHANICAL SEAL

Abstract of the Disclosure

Preferred embodiments of the present invention provide a submersible pumping system for pumping wellbore fluids. The submersible pumping system includes a rotatable shaft and a mechanical seal that substantially surrounds the shaft. The mechanical seal prevents the flow of wellbore fluid along the shaft and includes a spring, a spring retainer and a runner. The spring surrounds the shaft and provides an axial force along the shaft. The spring retainer is affixed to the shaft and includes a detent to hold the spring. The runner is in interlocking engagement with the spring retainer and accommodates the spring. The interlocking engagement causes the runner to rotate within the spring retainer while permitting axial movement of the shaft relative to the runner.